

***There are a lot of
changes that occur in
the dynamic of a
classroom when inquiry
based science is
conducted.***



Science National Standards

● Teaching Standard A

Teachers of science plan an inquiry-based science program for their students.

Chemistry I : Embedded Inquiry

- CLE 3221.Inq.2 Design and conduct scientific investigations to explore new phenomena, verify previous results, test how well a theory predicts, and compare opposing theories.

How to... Clinic



- Students are not born with the knowledge of how to act and handle inquiry based and cooperative learning. These skills need to be taught. I will slowly introduce inquiry based learning by starting with hands-on "cook book" labs and replacing sections with inquiry activities.

Let's start with having then writing their definition of prediction and hypothesis

http://teachertube.com/members/viewVideo.php?video_id=46432&title=Making_Predictions



Now they are thinking, so

- **CLE 3221.Inq.3** Use appropriate tools and technology to collect precise and accurate data.
- **CLE 3221.Inq.4** Apply qualitative and quantitative measures to analyze data and draw conclusions that are free of bias.
- **CLE 3221.Inq.5** Compare experimental evidence and conclusions with those drawn by others.
- **CLE 3221.Inq.6** Communicate and defend scientific findings

Would the size of the particles be an important factor in chemical reactions?



Which yeast would react faster with hydrogen peroxide ?

LABORATORY INVESTIGATION AND EXPERIMENTATION

- Before a lab, should always be time for predictions and hypothesis.
- Even when you already have a lab experience planned for your students. It is good to give them some time to tell you what would you need to carry out the experiment.
- <http://anaselby.wikispaces.com/file/view/heatupsomecollreactions.pdf>

It's Nanotime!

- Now the students have an idea of properties of matter, it may be a good time to have them introduced to the Nanoworld.
- The next resource is absolutely complete and kids friendly.

<http://www.brainpop.com/science/matterandchemistry/nanotechnology/>

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At the end...

- Students create a flip book as an extension activity
- I use the following link for flip books:
<http://www.readwritethink.org/materials/flipbook/>

Some of the National Science Standards

- The science education program standards describe the conditions necessary for quality school science programs. They focus on six areas and in this lesson will exercise two of them:
- The consistency of the science program with the other standards and across grade levels.
- The inclusion of all content standards in a variety of curricula that are developmentally appropriate, interesting, relevant to student's lives, organized around inquiry, and connected with other school subjects.

TN Standards

- CLE 3221.T/E.3 Explain the relationship between the properties of a material and the use of the material in the application of a technology.
- CLE 3221.Math.1 Understand the mathematical principles associated with the science of chemistry.
- CLE 3221.2.1 Investigate the characteristic properties of matter.

In Conclusion

- Nanoscience will be immersed in every area of Chemistry and once the students are introduced to the word nano, it will be much easier to them understand the behavior of matter and its relation with energy. They also will realize their compromise with the future

Recommendation

- At the end of my two week and based on the test results, I will present the movie Horton Hears a Who!





That's All!

● **NANOGRACIAS!**

From
Ana Selby

